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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,961	01/25/2002	Ching-Kee Chien	SP01-048	3884

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CORNING INCORPORATED
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EXAMINER

KNAUSS, SCOTT A

ART UNIT PAPER NUMBER

2874

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/056,961

Applicant(s)

CHIEN ET AL.

Examiner

Scott A Knauss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-23 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-14 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1. The references cited in the information disclosure statement have been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3 and ⁵~~5~~-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2001/0008906 (Chawla).

Regarding claims 1,2,5 and 7 Chawla discloses in table 1, ex. 3 a radiation curable coating, which is usable as an inner primary coating of an optical fiber (see abstract, [0018]) which includes:

35.2% of an oligomeric component (PRO 1735)

13.8% of at least one monomeric component (in this case isobornyl acrylate)

The coating having an elastic (Young's) modulus E' of at least 100 MPa (rows 8 and 9, table 2)

Chawla does not explicitly disclose a coating composition selected so that in response to a preload comprising the application of a stress of about 80 MPa to the coating at about 80 C and after a stress-relaxation period of at least about 1 hour, at about 80 C, residual stress exhibited by said coating comprises at least about 60 MPa (claim 1), at least 68 MPa (claim 5) or at least 76 MPa (claim 7)

Nevertheless, since Chawla discloses a coating having the chemical composition specified by claim 2 (i.e. 0-90 wt % oligomeric, 5-97 wt % monomeric, with a Young's modulus of at least 100 MPa, it would inherently possess such residual stress properties as set forth in claims 1, 5 and 7.

Chawla discloses the use of the coating as an inner primary coating, but does not explicitly specify that the coating is applied to an outer surface of a cladding surrounding a core.

Nevertheless, Chawla discloses that the radiation curable compositions are used to provide protective coatings on existing optical fibers [0002], and since it is well known in the art to provide radiation curable coatings on the outer surface of a cladding surrounding a core, it would then have been obvious to one of ordinary skill in the art to coat an inner primary coating onto the cladding of a fiber for the purpose of providing a protective coating on the optical fiber.

Regarding claim 3, Chawla discloses that an ethylenically-unsaturated monomer can be used to provide a copolymer backbone [0080] or a monomer diluent [0099].

Regarding claim 6 Chawla discloses in [0166] the use of a glass adhesion promoting compound which contains silane, and may be as little as 0.1 wt % of the composition, much less than 4.0 pph.

Regarding claims 8 and 9, Chawla discloses a coating which is 75 microns thick (see [0205])

Regarding claims 10 and 11, Chawla discloses that the composition can have an elastic (Young's) modulus E' of 1000 MPa (row 8, table 2)

Regarding claim 12, Chawla discloses the use inner and outer primary coatings [0018] which would be, as modified above in claim 1, applied to multiple segments of the outer surface of the cladding of a fiber.

Regarding claim 13, Chawla does not disclose applying the coating to a polarization maintaining fiber. Nevertheless, such fibers are well known in the art, and it would have been obvious to one of ordinary skill in the art to apply the coatings to different types of fibers for the purpose of protecting the fibers.

Regarding claim 14, Chawla discloses a coating having a T_g temperature (ex. 3, row 10, table 2) of 78 degrees C.

Allowable Subject Matter

5. Claims 15-23 are allowed.

Regarding claim 15 in particular, the prior art fails to teach or suggest combining a fiber having the residual stress properties set forth in claim 1 with a phase shifter

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rotating states of polarization to a desired orientation, and coupling the phase shifter to a variable delay section which serves to delay principal states of polarization with respect to one another.

Regarding claim 23 in particular, the prior art fails to teach or suggest combining a fiber with the residual stress properties set forth in claim 1 with a mechanical squeezer applying mechanical stress to a segment of the fiber, and a second optical fiber having a second mechanical squeezer, the second fiber being coupled to the first fiber at an angle of about 45 degrees with respect to the polarization axes of the first optical fiber.

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 4, the prior art fails to disclose a coated optical fiber having the properties set forth in claims 1 and 2, in which coating is substantially devoid of an oligomeric component, and the monomeric component comprises at least two monomers.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2001/0025062 (Szum et al), 5,891,930 (Lapin et al) 6,057,034 (Yamazaki et al) and 6,534,557 (Szum et al) each disclose relevant coating compositions similar to that of Chawla.

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US 5,903,684 (Payton), 4,923,290 (Brinkmeyer et al) and 4,988,169 (Walker) each disclose relevant polarization scramblers using fiber squeezers.

US 5,930,414 (Fishman et al) and US 6,385,357 (Jopson et al) disclose relevant PMD compensators using variable delay elements.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Knauss whose telephone number is (703) 305-5043. The examiner can normally be reached on 9-6 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308 - 4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Scott Knauss

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sak
May 16, 2003


HEMANG SANGHAVI
PRIMARY EXAMINER